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Eighth survey of staffing in cardiology in the United Kingdom 1992

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Abstract

The Eighth Survey of Staffing in Cardiology was conducted with an index date of 30 September 1992. The total number of cardiologists in England and Wales, defined as individuals trained in the specialty and spending at least 40% of their professional time working in it, was 358. Of these 11 were part time, defined as six sessions or less, giving a number in whole time (or near whole time) equivalents of 352·5. The number of individuals increased from 1991 by 18 (5·3%). There were 71 cardiologists in Scotland and Northern Ireland, making a total for the United Kingdom of 429 individuals (423·5 whole time equivalents), which is 7·3 per million population. A total of 44 Districts serving 8·8 million people have no resident cardiologist. There has been little improvement since the 1991 survey. An additional 34 Districts with populations greater than 250 000 have only one cardiologist: we have clear evidence of inadequate provision of care in most of these, a situation that is inevitable within the resources provided. A wider threat to the provision of a satisfactory level of cardiological care throughout the United Kingdom will follow from changes in the organisation of the National Health Service and in the new requirements for training of future cardiologists because these changes will make major new demands on consultant time which cannot be met within existing resources. A crisis will be averted only if a rapid and major expansion of the consultant grade can be achieved.

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The British Cardiac Society has conducted staffing surveys since 1980. Data were collected biennially until 1990,[1–5] they are now collected annually because of the rapid changes occurring within the specialty and within the National Health Service.[6] The 1992 survey, that is the subject of this report was the first to be conducted in association with the Manpower Committee of the Royal College of Physicians of London using census forms for all hospital consultants. Cooperation was arranged to avoid unnecessary duplication of effort and consistency of data. The British Cardiac Society (through the Trafford Centre) was responsible for sending and collecting the forms, which had been designed for use by the Royal College of Physicians. Information needed for our own purposes relating to cardiologists in England and Wales was extracted from the forms before they were sent to the Royal College of Physicians for the analysis that related to all medical specialties. Supplementary forms were designed to provide additional information for the British Cardiac Society and these were sent by the same mailing. Cardiologists in Scotland and Northern Ireland received only a British Cardiac Society questionnaire similar to that used in previous surveys. Most information on senior registrars was obtained by telephone supplemented when necessary by postal enquiries.

The index date for the 1992 survey was 30 September. Previous surveys have had an index date of 31 July. The change was necessary to achieve full compatibility with the requirements of the Royal College of Physicians and comparability with the data collected independently by the Department of Health using the same index date. Differences between the present data and those in the 1991 survey therefore represent changes over an interval of 14 months.

Methodology

Changes in the organisation of the National Health Service have made it necessary to modify our methods of data collection. Previously we relied heavily on nominated contacts within Regions and Districts. This is no longer appropriate, so questionnaires were sent to individual consultants. In some respects this has added to the complexity of the survey, but we believe that the method may enhance accuracy at least in some minor details. We obtained information on new appointees from several independent sources. All discrepancies with previous surveys were resolved by further enquiries.

As usual most forms were returned promptly—approximately 65% within 6 weeks of the first mailing. But many of the remainder did cause difficulties. Complete data were obtained only after one to four reminders by post and after numerous telephone calls. These late responses added considerably to the expense of the survey, were time consuming to those with responsibility for data collection, and delayed effective use of the information in negotiations and planning. We appreciate the difficulties and frustration of busy colleagues—and sympathise

with them—and in turn hope that our persistence is forgiven. We have maintained an eventual 100% response from consultants in all eight surveys that we have conducted.

Difficulties in the composition of the data relate to criteria for inclusion of colleagues in the survey and their appropriate classification according to the division of workload between cardiology and general internal medicine. All who are included must spend at least 40% of their professional time in cardiology and must have had major specialty training in cardiology. For younger colleagues specialty training usually equates with accreditation; a strict training definition cannot always be applied to older cardiologists who were appointed from posts that were then poorly defined, but their status has long been established. The cut-off point arbitrarily separating those classified as cardiologists from cardiologists with general internal medicine is set at 80% of professional time devoted to the specialty rather than 100%, because even some interventionalist cardiologists have minor medical "on-take" commitments. Work patterns sometimes change and individuals may move from one category to another.

As in previous surveys a major centre has been defined as a cardiac unit that has full investigatory facilities plus cardiac surgery.

The data

Relevant information from the 1992 survey is presented, as usual, in tables and graphs with a similar format to that used previously. Population figures have been obtained from the Office of Population Censuses and Surveys and are estimates for mid 1991 (England, Wales, and Scotland) and mid 1992 (Northern Ireland). They are given in thousands rounded to one decimal place.

Although many hospitals are now NHS Trusts, they are considered for the purposes of this survey as being located within a District Health Authority boundary and serving that population. The change in the organisation of District Authorities is monitored by the Office of Population Censuses and Surveys. Some differences have occurred between the 1990 District data (used for the 1991 survey) and the 1991 District data (used for the 1992 survey). These changes are as follows: Leeds East and West have been combined, Bloomsbury and Islington have been combined; Birmingham South and Central have been combined; and North Warwickshire and Rugby have been combined. Thus we have four fewer Health Districts.

Some cardiologists work in more than one Region. This is especially true in London. In the seventh survey we showed divided commitments as being a half time post in each Region. In this survey individuals are counted only in the Region of their base hospital. Cardiologists who work part time (six sessions or less) are shown as 0·5 whole time equivalents.

The figures that appear in parentheses in the tables are 1991 data used for comparative purposes. The following abbreviations are used: HD, Health District; HB, Health Board; HSSB, Health and Social Services Board; MC, major centre; WTE, whole time equivalent; SR, senior registrar.

Our survey does not include the Isle of Man or the Channel Islands. We identified four Armed Forces cardiologists in post in September 1992 but the figures are not included in the present survey. Several cardiologists trained within the National Health Service spend most or all of their time working in private hospitals. They have not been included in the present survey though the data are available and will appear in parentheses as the 1992 comparison when this information is presented for the first time in the 1993 survey. We believe that some movement towards whole time private practice is inevitable and must be taken into account when provision of services is monitored.

Staffing: consultant grade

Table 1 (fig 1) shows that the total number of cardiologists in England and Wales has continued to increase. Increments up to 1990 represent changes over two years because the surveys were biennial. Posts that were vacant on the survey date because of retirements have been included in the totals.

An important shift has occurred between the categories "cardiology" (which shows an increase of 42 whole time equivalent posts in a year) and "cardiology/GIM" (which shows a decrease of 22·5). The shift has occurred because of changes in the practice of 25

Table 1 Cardiovascular physicians in England and Wales, 1980–1992

	Cardiology		*Cardiology/GIM*			
Year	*Adult*	*Paediatric*	*Adult*	*Paediatric*	*Totals*	*% Increase*
1980	103	19	98	3	223	
1982	111 (8)	18 (−1)	117 (19)	4 (1)	250 (27)	12·11
1984	111 (0)	29 (11)	121 (4)	6 (2)	267 (17)	6·80
1986	119 (8)	31 (2)	118 (−3)	2 (−4)	270 (3)	1·12
1988	130 (11)	33 (2)	128 (10)	0 (−2)	291 (21)	7·78
1990	145·0 (15·0)	39·0 (6·0)	134·0 (6·0)	2·0 (2·0)	320·0 (29·0)	9·97
1991	165·5 (20·5)	42·0 (3·0)	124·5 (−9·5)	2·0 (0·0)	335·0 (15·0)	4·69
1992	207·5 (42·0)	42·0 (0·0)	102·0 (−22·5)	1·0 (−1·0)	352·5 (17·5)	5·22

Numbers in parentheses show the change in numbers over the previous survey. Starting from 1990 the survey has been conducted annually, consultants with less than seven clinical (including academic) sessions per week have been counted as holding a half post, and posts vacant on the survey date due to retirement have been included. The 1992 survey was carried out 14 months after the 1991 survey.
"Cardiology" is defined as spending more than 80% of professional time in the specialty. "Cardiology/GIM" requires training in cardiology and more than 40% of professional time in the specialty. GIM, general internal medicine.

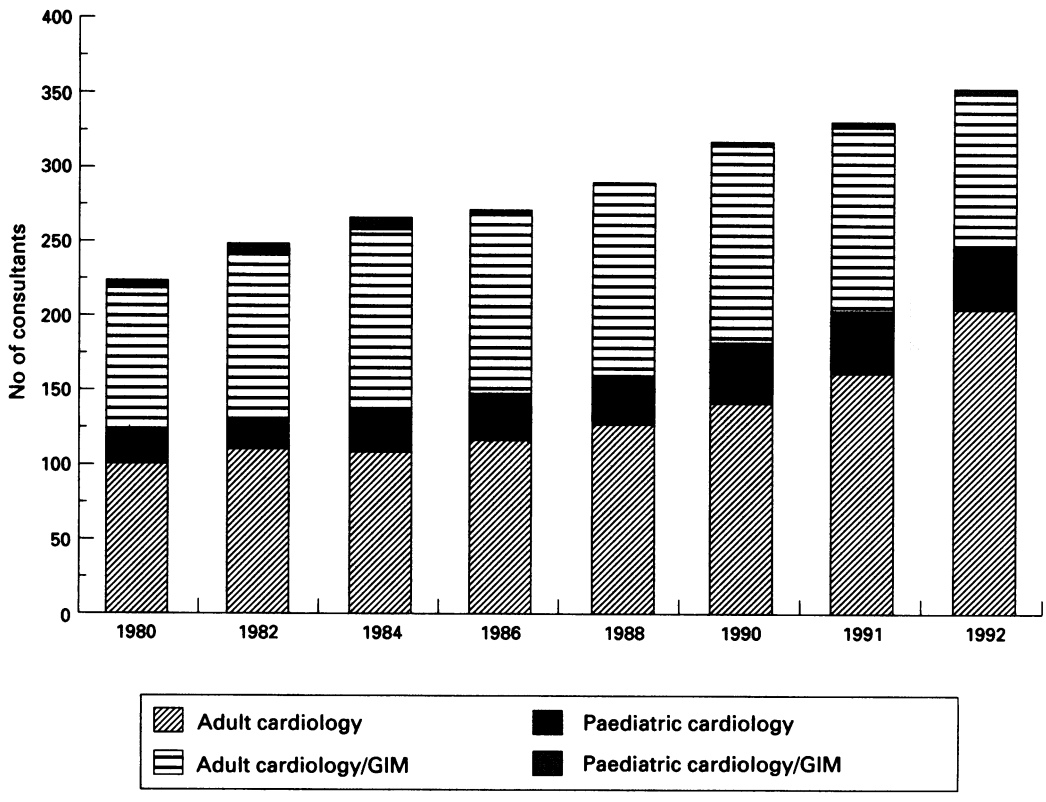

Figure 1 Changes in the number of cardiologists in England and Wales (1980 to 1992). The surveys were biennial until 1990 and annual from 1990.

individuals, presumably reflecting differences in organisation since the inception of the internal market, as well as the tendency to undertake more specialised cardiology, including cardiac catheterisation, within district general hospitals (DGHs) or by DGH cardiologists within major centres. Twenty three of the 25 individuals whose designation has changed have contracts as "physicians with an interest in cardiology", but wherever we have deemed it necessary to check the accuracy of the change we have been assured that the general medical component has become appreciably less in comparison with the workload in cardiology. Figure 1 shows the tendency for the proportion of those practising full time cardiology to increase over the eight surveys.

Table 2 shows the total of cardiologists in each Region of England and Wales. The apparent decrease in provision in North East Thames represents a change in the practice of one individual, who now undertakes a greater proportion of general internal medicine, and the amended classification of two others who are counted now only within the region of their base hospital. There has been no true change in the number of individuals in this Region. The decrease of three posts in Trent and of a half post in West Midlands is due to a reduction in cardiology commitments. All of the other Regions show an increase in provision.

Table 2 Cardiovascular physicians by Region of England and Wales (30 September 1992)

Region	Population mid 1991	HDs	MCs	Cardiology		Cardiology / GIM		Total WTEs	Total individuals
				Adult	Paediatric	Adult	Paediatric		
East Anglia	2077·2	8 (8)	1	7·0 (6·5)	0·0 (0·0)	3·0 (3·0)	0 (0)	10·0 (9·5)	10 (10)
Mersey	2408·9	10 (10)	2	7·0 (6·0)	3·0 (3·0)	6·5 (6·0)	0 (0)	16·5 (15·0)	17 (15)
NE Thames	3774·1	15 (16)	3	18·0 (16·0)	0·0 (0·0)	5·0 (9·0)	0 (0)	23·0 (25·0)	23 (24)
NW Thames	3568·3	13 (13)	2	21·0 (15·0)	2·0 (2·0)	6·0 (6·0)	1 (1)	30·0 (24·0)	30 (24)
North Western	4000·0	19 (19)	3	13·0 (10·0)	3·0 (3·0)	9·0 (11·0)	0 (0)	25·0 (24·0)	25 (24)
Northern	3083·2	16 (16)	1	12·0 (8·5)	3·0 (3·0)	8·0 (9·0)	0 (0)	23·0 (20·5)	23 (21)
Oxford	2552·6	8 (8)	1	6·0 (4·0)	2·0 (2·0)	7·0 (8·0)	0 (0)	15·0 (14·0)	15 (14)
SE Thames	3693·7	15 (15)	4	19·5 (16·0)	4·0 (4·0)	6·0 (9·0)	0 (0)	29·5 (29·0)	31 (30)
SW Thames	3024·4	13 (13)	1	15·0 (12·0)	0·0 (0·0)	3·0 (4·0)	0 (0)	18·0 (16·0)	19 (16)
South Western	3290·1	11 (11)	1	13·5 (9·5)	3·0 (3·0)	2·0 (4·0)	0 (0)	18·5 (16·5)	19 (17)
Trent	4706·2	12 (12)	2	10·0 (10·0)	2·0 (2·0)	9·5 (11·5)	0 (1)	21·5 (24·5)	22 (25)
Wessex	2971·8	10 (10)	1	5·0 (3·0)	3·0 (3·0)	9·0 (10·0)	0 (0)	17·0 (16·0)	17 (16)
West Midlands	5250·6	20 (22)	3	18·0 (14·5)	3·0 (3·0)	11·0 (15·0)	0 (0)	32·0 (32·5)	32 (33)
Yorkshire	3669·9	16 (17)	3	17·0 (12·5)	3·0 (3·0)	7·0 (10·0)	0 (0)	27·0 (25·5)	27 (26)
Wales	2884·0	9 (9)	1	6·0 (5·0)	1·0 (1·0)	10·0 (9·0)	0 (0)	17·0 (15·0)	17 (15)
Special Hospitals		4 (4)	4	19·5 (18·0)	10·0 (10·0)	0·0 (0·0)	0 (0)	29·5 (28·0)	31 (30)
Totals	50955·0	199 (203)	33	207·5 (166·5)	42·0 (42·0)	102·0 (124·5)	1 (2)	352·5 (335·0)	358 (340)

Wales has 18 district hospitals distributed in 8 of its 9 Districts. The four designated Special Hospitals are located in the North East and North West Thames Regions. The figures include 6 posts vacant on the survey date. Corresponding 1991 data are given in parentheses.

Table 3 Cardiovascular physicians by Health Board in Scotland (30 September 1992)

Health Board	Population mid 1991	MCs	Cardiology		Cardiology/GIM		Totals
			Adult	Paediatric	Adult	Paediatric	
Argyll and Clyde	437·4	0	0 (0)	0 (0)	2 (2)	0 (0)	2 (2)
Ayrshire and Arran	376·9	0	0 (0)	0 (0)	2 (2)	0 (0)	2 (2)
Borders	104·1	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Dumfries and Galloway	147·7	0	0 (0)	0 (0)	1 (1)	0 (0)	1 (1)
Fife	349·4	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Forth Valley	272·9	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Grampian	515·6	1	3 (3)	0 (0)	0 (0)	0 (0)	3 (3)
Greater Glasgow	922·6	2	8 (8)	2 (2)	7 (7)	1 (1)	18 (18)
Highland	204·1	0	0 (0)	0 (0)	1 (1)	0 (0)	1 (1)
Lanarkshire	561·3	0	0 (0)	0 (0)	3 (3)	0 (0)	3 (3)
Lothian	751·0	1	8 (7)	2 (2)	0 (1)	0 (0)	10 (10)
Orkney	19·6	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Shetlands	22·5	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Tayside	392·5	0	2 (2)	0 (0)	1 (0)	0 (0)	3 (2)
Western Isles	29·4	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Totals	5107·0	4	21 (20)	4 (4)	17 (17)	1 (1)	43 (42)

The figures include two posts vacant on the survey date. Corresponding 1991 data are given in parentheses.

Table 4 Cardiovascular physicians by Health Board in Northern Ireland (30 September 1992)

Health Board	Population mid 1992	MCs	Cardiology		Cardiology/GIM		Totals
			Adult	Paediatric	Adult	Paediatric	
Eastern HSSB	652·1	1	14 (11)	2 (2)	1 (1)	0 (0)	17 (14)
Northern HSSB	399·7	0	2 (1)	0 (0)	2 (3)	0 (0)	4 (4)
Southern HSSB	292·7	0	1 (0)	0 (0)	2 (3)	0 (0)	3 (3)
Western HSSB	265·8	0	3 (2)	0 (0)	1 (2)	0 (0)	4 (4)
Totals	1610·3	1	20 (14)	2 (2)	6 (9)	0 (0)	28 (25)

The figures include one post vacant on the survey date. Population data is for 1992. Corresponding 1991 data are given in parentheses.

Tables 3 and 4 show comparable data for Scotland (one additional individual) and for Northern Ireland (three additional individuals).

Table 5 (fig 2) shows the number of retirements expected each year from the survey date (September 1992) to the year 2012. We have long been aware that the projected number of retirements from 1997 onwards has nearly doubled; the recent increase in the number of senior registrars in cardiology was obtained in part because these data were available and had been shown consistently over the last few surveys (our above average expansion was also taken into account because of the unchallengeable data provided by the surveys). Our retirement data are based on the stated intention of cardiologists, but the year to year differences are small with only minor variations over a year or two. The average age at which cardiologists in England and Wales *expect* to retire is 63. Intentions expressed in the 1991 survey were similar.

Table 5 Number of retirements expected each year for cardiovascular physicians in England and Wales (as of 30 September 1992)

Year	Cardiology		Cardiology/GIM		Total
	Adult	Paediatric	Adult	Paediatric	
Vacancies	2	1	3	0	6
1992	1	1	0	0	2*
1993	4	1	0	0	5
1994	2	0	4	0	6
1995	5	0	1	1	7
1996	3	1	2	0	6
1997	6	0	4	0	10
1998	2	1	4	0	7
1999	4	1	6	0	11
2000	8	1	8	0	17
2001	5	0	3	0	8
2002	3	0	7	0	10
2003	3	2	6	0	11
2004	12	4	3	0	19
2005	6	3	4	0	13
2006	6	0	1	0	7
2007	6	2	3	0	11
2008	13	0	6	0	19
2009	6	0	2	0	8
2010	13	1	5	0	19
2011	7	1	5	0	13
2012	15	3	3	0	21
After 2012	80	19	23	0	122
Totals	212	42	103	1	358

*Retirements expected after the survey date.

Tables 6 and 7 show predicted annual retirements for Scotland and Northern Ireland. No trends can be discerned in these tables because the numbers are small.

Table 8 shows Health Districts without resident cardiologists (in the fifth column headed "total") with separate listing for those who have no service from physicians meeting our own definition of a specialist and for those who have visiting cardiologists for up to six sessions per week. There continues to be a slow but steady decrease in the total number of the population without ready access to physicians trained in cardiology, but the figure of over eight million in England and Wales remains unsatisfactory. The influence of the internal market on this figure may become apparent over the next few surveys. Table 9 shows the comparable data for Scotland where the situation is unchanged apart from a minor shift in population. We have no separate table for Northern Ireland where there are three hospitals without separate provision but these have arrangements for cover that are deemed satisfactory.

Staffing: senior registrars

Tables 10 and 11 compare the numbers within Regions of cardiologists, senior registrars, and major cardiac centres. Apart from the loss of one part-time post, rotations between Regions, and allowing for the correction of

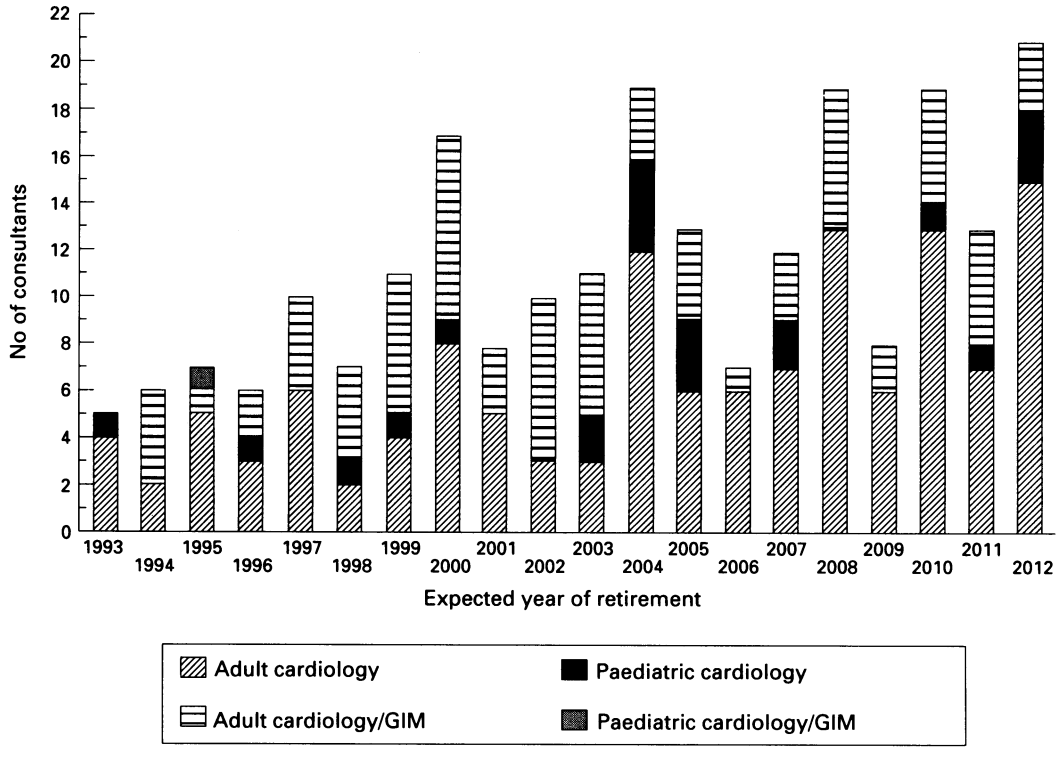

Figure 2 Expected years of retirement (England and Wales) as of 30 September 1992.

two errors there has been no change overall in the number of senior registrars or equivalents, though this will change shortly because manpower approval has been given for 20·5 new posts. There is a near twofold variation between Regions in the ratio of consultants to senior registrars, but this reflects in part variations in the number of major centres within the Regions. In addition to the 58 individuals in approved posts, there are 17 others who have ad hominem approval, work in related specialties, or consider for other reasons that they might appropriately compete for consultant posts.

Table 6 Number of retirements expected each year for cardiovascular physicians in Scotland (as of 30 September 1992)

	Cardiology		*Cardiology/GIM*		
Year	*Adult*	*Paediatric*	*Adult*	*Paediatric*	*Total*
Vacancies	0	1	1	0	2
1993	0	0	0	1	1
1994	0	0	1	0	1
1995	0	0	2	0	2
1996	0	0	0	0	0
1997	0	0	0	0	0
1998	1	0	0	0	1
1999	0	0	1	0	1
2000	1	0	1	0	2
2001	0	0	0	0	0
2002	1	0	2	0	3
2003	1	0	1	0	2
2004	0	0	0	0	0
2005	2	1	0	0	3
2006	2	1	2	0	5
2007	1	0	0	0	1
2008	3	0	2	0	5
2009	0	0	0	0	0
2010	1	0	0	0	1
2011	0	0	1	0	1
2012	1	0	0	0	1
After 2012	7	1	3	0	11
Totals	21	4	17	1	43

No retirements were expected for October to December 1992.

Table 12 shows that 24 consultants are expected to retire over the five years from 1993 to 1996 inclusive, whereas 56 senior registrar contracts will expire. If there were no other factors influencing the balance, we would have 32 individuals completing their training but unable to find posts. This is not expected to happen. If the expansion of new posts in cardiology continues at the rate of recent years, an additional 15 posts per year will be required in addition to those listed in the table and in addition to any that might become vacant through deaths or unplanned retirements. A positive balance in the number of senior registrars shown in recent surveys has been associated with a progressive dearth of trainees, and this trend is likely to continue until more training posts are available. Similar considerations apply to Scotland and Ireland (table 13 and 14) but the numbers here are small.

Comments

CHANGES IN THE STRUCTURE OF THE NATIONAL HEALTH SERVICE

From the time of the first Survey of Staffing in Cardiology in the United Kingdom in 1980[1] we have used the Regional and District tiers of the organisation of the National Health Service as the structure for data analysis. The introduction of the internal market has reduced the influence of Regional Health Authorities (which are soon to be replaced by a smaller number of administrative units under the NHS Management Executive) and converted the District authorities into "Purchasers" with the responsibility for the provision of care by contracts with the District hospitals which are—or will become—Self

Table 7 Number of retirements expected each year for cardiovascular physicians in Northern Ireland (as of 30 September 1992)

	Cardiology		*Cardiology/GIM*		
Year	*Adult*	*Paediatric*	*Adult*	*Paediatric*	*Total*
Vacancies	1	0	0	0	1
1993	0	0	0	0	0
1994	1	0	0	0	1
1995	0	0	0	0	0
1996	0	0	0	0	0
1997	1	0	0	0	1
1998	0	0	0	0	0
1999	0	0	1	0	1
2000	0	0	0	0	0
2001	1	0	0	0	1
2002	0	0	0	0	0
2003	2	1	1	0	4
2004	2	0	1	0	3
2005	1	0	0	0	1
2006	2	0	0	0	2
2007	0	0	1	0	1
2008	1	0	0	0	1
2009	0	0	0	0	0
2010	0	0	0	0	0
2011	1	0	1	0	2
2012	1	0	1	0	2
After 2012	6	1	0	0	7
Totals	20	2	6	0	28

No retirements were expected for October to December 1992.

Table 9 Scottish Health Boards without a cardiologist (30 September 1992)

Health Board	*Population without*
Borders	104·1 (103·5)
Fife	349·4 (345·9)
Forth Valley (Central)	272·9 (272·1)
Orkney	19·6 (19·6)
Shetlands	22·5 (22·3)
Western Isles	29·4 (30·7)
Total	797·9 (794·1)

Population data Office of Population Censuses and Surveys mid-1991. Corresponding 1991 data are shown in parentheses.

Governing Trusts. These changes have made the conduct of surveys more difficult and time consuming because of greater dependence on individual cardiologists for relevant data. They will also influence the presentation of results and hinder comparisons with data from previous years. For this survey with an index date of 30 September 1992 we have, however, retained the concept of Regional and District authorities in relation to "Provider" units. Comparisons within this framework therefore remain apposite and relevant, but modification will be needed in future.

CONSULTANT NUMBERS

The 1992 survey shows an increase in consultant numbers of 4·5% over 12 months (5·2% in the 14 months from the previous survey), close to the figure predicted in our 1992 evidence to the Joint Planning Advisory Committee (JPAC) and similar to the average increase over the previous decade. The most notable change since 1990 within the overall total has been a move to greater specialisation (fig 1): the ratio of cardiologists to physicians with an interest in cardiology has increased particularly from 1991 to 1992, both on account of new appointments and changes in the work pattern of some already in post. This is an inevitable trend with the increasing complexity of modern cardiology and is constrained principally because many hospitals still have too few physicians to provide a full specialist-based service.

DISTRICTS WITHOUT CARDIOLOGISTS

We remain concerned—as Purchasers should be—that many Districts still have no cardiologist (using our relatively loose definition that requires training in the specialty and a commitment to it of at least 40% of professional time). Progress in this area has been slow. In the United Kingdom we now have 44 Districts (8·8 million people or 6·6% of the population) without resident cardiologists. This does not include three small Districts within the Scottish Islands. There has been only a 10% improvement since the last survey. Even if we were to accept the untenable proposition that one to six "visiting" sessions per week can provide a minimum service, there would still be 33 Districts without suitable provision. This modest yardstick shows that only Oxford—which is a small Region—has no deficiency, while the North Western Region has the largest shortfall and showed no

Table 8 Health Districts with few or no cardiology sessions (by Region of England and Wales, 30 September 1992)

Region	*Population mid 1991*	*HDs*	*No cardiology**	*One to six sessions†*	*Total*	*Losses*	*Gains*	*Population without cardiology*
East Anglia	2077·2	8 (8)	1	1	2 (2)	0	0	421·9 (421·9)
Mersey	2408·9	10 (10)	3	0	3 (5)	0	2	702·3 (973·6)
NE Thames	3774·1	15 (16)	1	3	4 (3)	1	0	1018·3 (726·6)
NW Thames	3568·3	13 (13)	1	0	1 (3)	0	2	187·8 (723·3)
North Western	4000·0	19 (19)	5	0	5 (5)	0	0	874·1 (869·6)
Northern	3083·2	16 (16)	4	0	4 (6)	0	2	573·9 (998·9)
Oxford	2552·6	8 (8)	0	0	0 (0)	0	0	0·0 (0·0)
SE Thames	3693·7	15 (15)	1	1	2 (1)	1	0	491·0 (271·7)
SW Thames	3024·4	13 (13)	1	2	3 (3)	0	0	743·9 (736·8)
South Western	3290·1	11 (11)	1	1	2 (3)	0	1	361·8 (571·6)
Trent	4706·2	12 (12)	3	0	3 (3)	0	0	636·0 (636·6)
West Midlands	5250·6	20 (22)	3	2	5 (6)	0	1‡	1057·1 (1036·1)
Yorkshire	3669·9	16 (17)	2	1	3 (3)	0	0	479·4 (490·9)
Wales	2884·0	9 (9)	2	0	2 (2)	0	0	231·0 (231·1)
Special Hospitals		4 (4)	0	0	0 (0)	0	0	
Totals:	50 955·0	199 (203)	30	11	41 (47)	2	8	8031·1 (8940·1)

Wales has 18 hospitals in 8 of its 9 Districts (Powys has no DGH). The Wales population figure does not truly reflect the catchment areas of the 6 hospitals without cardiology. The apparent decrease in provision ("Losses") noted for two Regions is due to a change in the practice of two individuals who now spend less time in cardiology. Corresponding 1991 data are shown in parentheses.
* Shows the number of Districts without a resident or visiting cardiologist (using our definition).
† Nine of these Districts have between 4 and 6 sessions, two have 1 and 2 sessions respectively.
‡ Apparent improvement due to District reorganisation.

Table 10 Cardiovascular physicians, senior registrars, and equivalents by Region of England and Wales (30 September 1992)

Region	HDs	MCs	Consultants*	Senior registrars and equivalents: NHS A	NHS P	Academic A	Academic P	Research quota	Total*	Ratio Cons/SR
East Anglia	8	1	10	1·0	0·0	0	0	1	2	5·0
Mersey	10	2	17	2·0	1·5	0	0	0	4	4·3
NE Thames	15	3	23	4·0	0·0	0	0	1	5	4·6
NW Thames	13	2	30	1·0	0·0	3	0	0	4	7·5
North Western	19	3	25	4·0	0·0	0	0	0	4	6·3
Northern	16	1	23	1·0	1·0	1	0	0	3	7·7
Oxford	8	1	15	1·0	0·0	1	0	0	2	7·5
SE Thames	15	4	31	3·5	0·0	0	0	0	4	7·8
SW Thames	13	1	19	2·0	0·0	0	0	0	2	9·5
South Western	11	1	19	2·0	0·0	0	0	0	2	9·5
Trent	12	2	22	2·0	0·0	2	0	0	4	5·5
Wessex	10	1	17	2·0	1·0	0	0	0	3	5·7
West Midlands	20	3	32	1·0	1·0	2	0	0	4	8·0
Yorkshire	16	3	27	2·0	1·0	1	0	0	4	6·8
Wales	9	1	17	1·0	0·0	1	0	2	4	4·3
Special Hospitals	4	4	31	5·0	2·0	0	0	0	7	4·4
Totals	199	33	358	34·5	7·5	11	0	4	58	6·2

A, adult; P, paediatric.
* Individuals not WTEs.
Included in the figures are 6 consultant and 6 SR posts vacant on the survey date. Seventeen additional SRs were competing for consultant posts in cardiology (see text). The two part time SR posts are shown as 0·5 posts.

improvement since the last survey. There has also been no improvement in Scotland. Although there are District Hospitals in Northern Ireland without resident cardiologists, we accept that the different organisation of care in the Province makes the arrangements satisfactory.

LARGE DISTRICTS WITH ONLY ONE CARDIOLOGIST

Having one cardiologist in the District is by no means an indication of an adequate service. The British Cardiac Society has pressed strongly for a minimum of two cardiologists for Districts with a population of 250 000 or more. This objective is very far from overprovision. In England and Wales there are 37 Districts with one cardiologist that require at least two, according to the modest proposal outlined above. In 1992 we conducted a separate survey of the cardiologists within these Districts (about 6 months before the main survey). Some of the following results of our detailed questionnaire confirm that there are serious deficiencies that cannot be met with existing resources.

Within the 37 Districts we found a range of difficulty that showed some correlation with size. In 15 districts one consultant was responsible for a population of over 300 000 and in seven of these Districts the standardised mortality ratio was over 100 for both men and women. In order to obtain a measure of the burden of cardiac disease we multiplied the size of each District by the male standardised mortality ratio for coronary deaths. On the basis of this score, we found that eight of the highest ten had waiting times for outpatient appointments of 12 weeks or more, whereas only four of the remaining 26 had waiting times that long (we had no appropriate data from one District). This clear indication of pressure in the large and busy Districts indicates heightened risk to the community and should be regarded by the Purchasers as unacceptable.

Other indicators of inadequate provision were clear from the questionnaires. Of the 37 cardiologists, 19 generally saw all patients admitted with cardiac emergencies, but only 11 of them were usually able to do so within 24 hours. Similarly only 11 of the 37 consultants could aim to see all new outpatients on their first visits. Most considered that they spent too little time on audit and in supervising their technicians. Thirty two were dissatisfied with the time they could spend on rehabilitation (which averaged only 30 minutes per week on their estimates) and 19 wanted more time for resuscitation training.

Table 11 Cardiovascular physicians, senior registrars, and equivalents in Scotland and Northern Ireland (30 September 1992)

Region	No of HBs	No of MCs	Cardiology	Cardiology/ GIM	Total consultants	Senior registrars
Scotland	15	4	25	18	43	7
Northern Ireland	4	1	22	6	28	4

The figures include vacancies for one consultant and one SR in Northern Ireland and two consultants and one SR in Scotland.

Table 12 Consultant retirement and senior registrar availability in England and Wales (30 September 1992)

Year	Consultants retiring	SR contracts expiring	Balance of SRs available	(Other SRs competing)†	(Balance including other SRs)
1993	5	11	6	(3)	(10)
1994	6	15	9	(3)	(12)
1995	7	13	6	(3)	(9)
1996	6	17	11	(7)	(18)
Totals	24	56*	32	(17)	(49)

*Plus 2 part-time SRs whose contracts expire in 1997 and 1998.
†See text.

Table 13 Consultant retirement and senior registrar availability in Scotland (30 September 1992)

Year	Consultants retiring	SR contracts expiring	Balance of SRs available
1993	0	2	2
1994	1	1	0
1995	1	0	−1
1996	0	4	4
Totals	2	7	5

Almost all the cardiologists who were questioned were deeply concerned about the shortcomings in the service they provide. Without further help they did not feel that improvement was possible. Fourteen of the 37 had no regular help from experienced junior staff, and eight remarked that help was irregular or shared. While many spent time on private practice, 14 of the 37 spent more than 50 hours per week on NHS work, not including on-call commitments, and seven spent more than 60 hours per week. Much of this time had to be devoted to general medicine rather than cardiology, and the mean number of dedicated cardiology sessions was only six. Thus many large Districts with only one cardiologist have no better provision than many Districts with only visiting cardiologists, apart from the (admittedly important) benefit of expertise that is potentially available at all times.

A British Cardiac Society working party is finalising a new report which is likely to include a recommendation that all DGHs should have at least two cardiologists. This proposal—amounting to approximately eight cardiologists per million population—is modest by international standards. The American College of Cardiology, for example, recommends 60 cardiologists per million population. At present 18% of cardiologists in England and Wales (and a quarter of those working in DGHs) are on call for either cardiology or general medicine every day, and a further 10% every other day.

IMPLICATIONS FOR STAFFING OF OUR EXISTING CRITERIA

The assertion that all Districts without a resident cardiologist should have one, and that Districts with over 250 000 population require two cardiologists predicates an urgent need for 82 new appointments in district general hospitals. In 1991 we calculated—on the basis of recommended need for surgical and medical intervention[5]—that our cardiac centres require an additional 63 cardiologists, likely now to be an under-estimate with the increase in the number of angioplasties that are performed. But these 147 additional posts take no account of the important changes that are taking place in training programmes.

Three developments—all of them desirable—are being pressed simultaneously. First, the Calman report[7] and the draft requirements of the Executive Committee of the new European Board in Cardiology require that the duration of training be shortened. We believe this will reduce the average training period after registration from 12 years to 9 (minimum 7 with additional years depending on time to MRCP, research opportunities, and training as an interventionalist). Secondly, the number of career (that is, European Union) registrars is being reduced appreciably at the behest of JPAC. Thirdly, the Department of Health is pressing for a continuing reduction in the hours worked by trainees. The resulting increased service commitment on consultants who are already hard pressed is difficult to quantify, but there are additional problems. The new structured and shortened training programme will require a much greater participation from consultants: in effect, training is set to replace an apprenticeship system. We believe that a provisional assessment from the Conference of Medical Royal Colleges[8] is modest: an annual increase in consultant numbers of 7% over five years in addition to other requirements. Added to our current urgent needs, this implies a growth rate in consultant numbers of 17% per annum. This is unattainable. Whether we face difficulty, crisis, or near collapse in our efforts to combine provision of a reasonable service and adequate training of junior staff depends on the shortfall in consultant numbers.

In the light of these sombre statistics the modest excess of senior registrars finishing their contracts in comparison with consultant retirements will not halt the dearth of fully trained applicants for consultant appointments. "Fully trained" refers, however, to the completion of the senior registrar contract. Many trainees of senior registrar and even registrar level have long years of experience and accelerated promotion would not be inappropriate. Over the past decade the average age of individuals at consultant appointment has remained almost steady at 37 years.

Table 14 Consultant retirement and senior registrar availability in Northern Ireland (30 September 1992)

Year	Consultants retiring	SR contracts expiring	Balance of SRs available
1993	0	1	1
1994	0	1	1
1995	1	0	−1
1996	0	2	2
Totals	1	4	3

SPECIAL NEEDS OF PAEDIATRIC CARDIOLOGY

The British Paediatric Cardiac Association in responding to the Calman report has identified the needs of the specialty for the next decade. Their principal conclusion was that paediatric cardiologists in the United Kingdom should continue to be adequately trained in order to maintain the existing high professional standards enjoyed in United Kingdom which bear comparison with the best in Europe.

The present staffing levels for paediatric cardiology in the United Kingdom are perilously low, and not comparable to those in most developed countries. We have only 48 full time consultants working in the Regional centres. Their training depends on eight senior registrar posts with two others agreed but not yet implemented. The 1992 Working Party of the Royal College of Physicians and the British Cardiac Society[9] endorsed the need for a modest increase in staffing to a minimum of one consultant per million population to cope with the enlarging scope of paediatric cardiological practice, which now includes prenatal diagnosis and treatment, interventional procedures of many kinds, and

the continuing management of adults with congenital heart disease.

The British Paediatric Cardiac Association supports the need for a more formal training programme, and believes that given such a programme four years should then be sufficient for higher professional training. There are, however, concerns that setting out on such a programme requires a major decision in career development at a very early stage. Flexibility is mandatory to allow a subsequent change in direction.

A structured training programme will place a huge burden on the small number of paediatric cardiologists currently in post. A major increase in consultant numbers is urgently needed. The figure suggested by the Royal Colleges in response to the Calman report of around 15% over the next three years is appropriate, but it presents an additional problem. We have insufficient training positions to support such an expansion.

An increase in the number of higher professional training posts must therefore accompany the expansion of the consultant grade. The recent insistence of a government minister[10] that all new proposals for staffing or training must be met from within existing budgets is unrealistic. The various proposals and directives that are being received from authorities within the United Kingdom and the European Union make demands that are mutually incompatible. Poorly coordinated and ill-advised attempts to meet all of these demands without adequate provision of resources will cause a serious decline in the quality of the clinical service in paediatric cardiology.

THE FUTURE

The developing internal market will lead to a reduction in the number of acute hospitals. The new training programmes will have a much smaller service component and the hours worked by junior staff will be curtailed further. All these changes will greatly alter the pattern of delivery of specialist cardiac care.

The mergers of specialist services in London recommended in the Tomlinson review are likely to be followed by similar moves in other major metropolitan areas. Predictions and decisions may, however, become more difficult because the infrastructure for strategic planning has been largely dismantled by central government as part of its policy relating to the internal market reforms.

We hope for a measured pace of change so that necessary adjustments can be made without compromising either the standards of care of patients with cardiac disease or the research and development that is so important to the future of our specialty.

Monitoring is a prerequisite if change is to be accomplished with benefits that outweigh the damage that can so readily occur. It is needed particularly in relation to medical staffing and trainee numbers: errors made in haste as a result of faulty assessments and inadequate data may not be amenable to early correction. We have a duty to advise and a reasonable expectation that our advice will influence future management decisions. The regular surveys conducted by the British Cardiac Society in association with the Royal College of Physicians provide an invaluable resource of sound data and will undoubtedly be needed every year in the foreseeable future.

We thank the Manpower Committee of the Royal College of Physicians for their help in data collection.

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